PRICE $5.00

POWER SUPPLY

INSTRUCTION MANUAL

kepco®

131-38 SANFORD AVENUE • FLUSHING, N. Y. 11352
Area Code 212 IN 1-7000 • TWX # 212-539-6623

INSTRUCTION MANUAL

DC POWER SUPPLY

MODEL PR 155-4, -4M

SERIAL NO. C-56022.....

The Kepco equipment described in this instruction manual is of proprietary design, covered by one or more of the following United States patents, or by patents pending:

2,992,379	3,092,757
2,992,386	3,112,439
3,028,538	3,128,423
3,056,905	3,131,344
3,088,053	

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SCHEMATIC DIAGRAMS

KEPCO, INC.
VOLTAGE REGULATED POWER SUPPLIES MODEL PR 155-4, (M)

A-1 ELECTRICAL AND PHYSICAL SPECIFICATIONS

..... DC OUTPUT. - 0-155 volts, at 0-4 amperes.

Output voltage continuously adjustable. A residual voltage of not more than 150 mv (approximately 0.1% of the maximum output voltage) exists at the output when the control is set to zero, at no load.

..... AC INPUT. - 115 volts, ±10 v; 60 cps, ±5%; 9.0 amperes.

Changes in line frequency within stated frequency tolerances produce approximately equal and linear % changes in output voltage.

..... LINE REGULATION. - ±1% for ±10 volt change in AC line voltage; at maximum rated output voltage and current.

..... LOAD REGULATION. - Specified at maximum rated output voltage, with the load connected to the rear output terminals:

Less than 2% for a change in load current between full-load and half-load.

Less than 4% for a change in load current between full-load and quarter-load.

..... RIPPLE. - Less than 0.6% (rms) at maximum rated output voltage and current.

..... OUTPUT IMPEDANCE. - Less than 0.1 ohm 1 KC to 10 KC; 0.1 ohm + 0.5 μh, 10 KC to 100 KC.

..... AMBIENT OPERATING TEMPERATURE. - -20°C to +55°C.

..... STORAGE TEMPERATURE. - -40°C to +85°C.

..... DIMENSIONS. - Height 7"; Width 19"; Depth 13-7/8" behind panel.

..... COLOR. - Kepco Standard Gray Hammertone.

..... WEIGHT. - 70 pounds.

..... MOUNTING. - Standard rack, or bench.

..... METERS. - (On Models with suffix "M" on Model number)
Voltmeter: 0-200 volts DC, 2-1/2".
Ammeter: 0-4 amperes DC, 2-1/2".

A-2 TERMINALS AND CONTROLS -

- (On Front Panel):

....POWER: Input On-Off Switch, Pilot Light, and Input Fuse.

....VOLTAGE CONTROL: Adjustable control for setting the output voltage.

....DC: Overload breaker, Depress To Reset; and three 5-way output binding posts marked (-), (GND), and (+).

- (On Rear of Supply):

....DC: Additional 5-way binding posts for DC output.

....INPUT: Three-wire safety ground line cord.

MODEL PR 155-4M (Typical of all 7 inch high PR Models)

A-3 GENERAL OPERATING INSTRUCTIONS

This KEPCO Regulated Power Supply consists of a regulated, adjustable-voltage AC power source, supplied by a KEPCO "Flux-O-Tran" constant voltage transformer. The AC source is followed by a full-wave semi-conductor rectifier and capacitive filter, of characteristically low internal impedance. The Supply is designed to furnish DC power, at voltage which can be set to any value over a continuously adjustable range; and to maintain that voltage constant within regulation specification as the line voltage and load change.

....INSTALLATION

The Power Supply is shipped without any internal packing material and may be put into operation immediately. It is equipped with carrying handles on the front panel, and is completely encased for bench use. It is also designed so that it may be installed directly on a standard 19-inch rack. Air is circulated through the side panel openings by the internal fan unit.

The ground pin (green wire) of the three-wire line cord is connected internally to the chassis for grounding purposes. When the two-prong receptacle adaptor supplied with the unit is used, the green pigtail lead must be connected to a suitable ground connection in order to ground the chassis.

....DC OUTPUT

The load regulation has been specified for operation with the load connected to the rear output terminals. When the load is connected to the front panel terminals, the load regulation will include any voltage drop in the internal bus connected between the front and rear binding posts.

The DC output is isolated from the chassis, and from the AC power line. Either Positive or Negative output terminal may be grounded. The Ground terminal on the back of the unit is equipped with a jumper link for this purpose. (Be sure to check the position of this link at the rear, before attempting to ground one of the front-panel output terminals).

The design of this Power Supply includes a very high value of capacitance across the output. Due to the charge developed across this capacitor, the voltage across the output terminals will sometimes fall at a slower rate when the output voltage is turned down, or off, depending on the value of internal bleeder resistance and the value of any external load still applied,

....SERIES, PARALLEL OPERATION

The output of two or more PR Models may be connected in series, up to a maximum condition of potential between chassis and either output terminal not to exceed 400 volts.

The output of two or more PR Models may be connected in parallel for higher current requirements. It is necessary to carefully adjust the voltage control of each Supply for equal current from each unit.

....OVERLOAD PROTECTION

The KEPCO "Flux-O-Tran" transformer has an inherent current limiting characteristic which permits operation into an output overload of short duration. However, the circuit breaker will release and interrupt the output current in the event of a sustained overload, primarily to protect the voltage control.

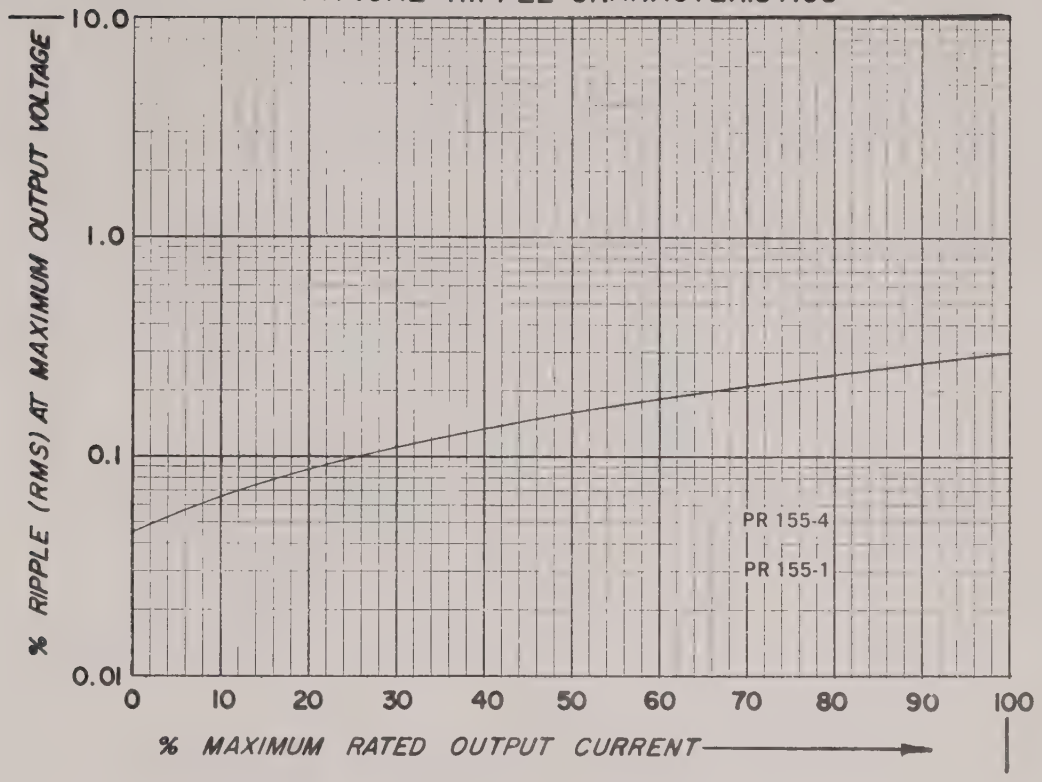
....MAINTENANCE

Conservatively rated components assure a long trouble free operating life. Under normal operating conditions, no mechanical maintenance of any kind should be required. The fan unit is permanently lubricated by the manufacturer and should not require subsequent lubrication. An occasional careful brushing or dusting of the interior to remove any accumulations of dust is suggested.

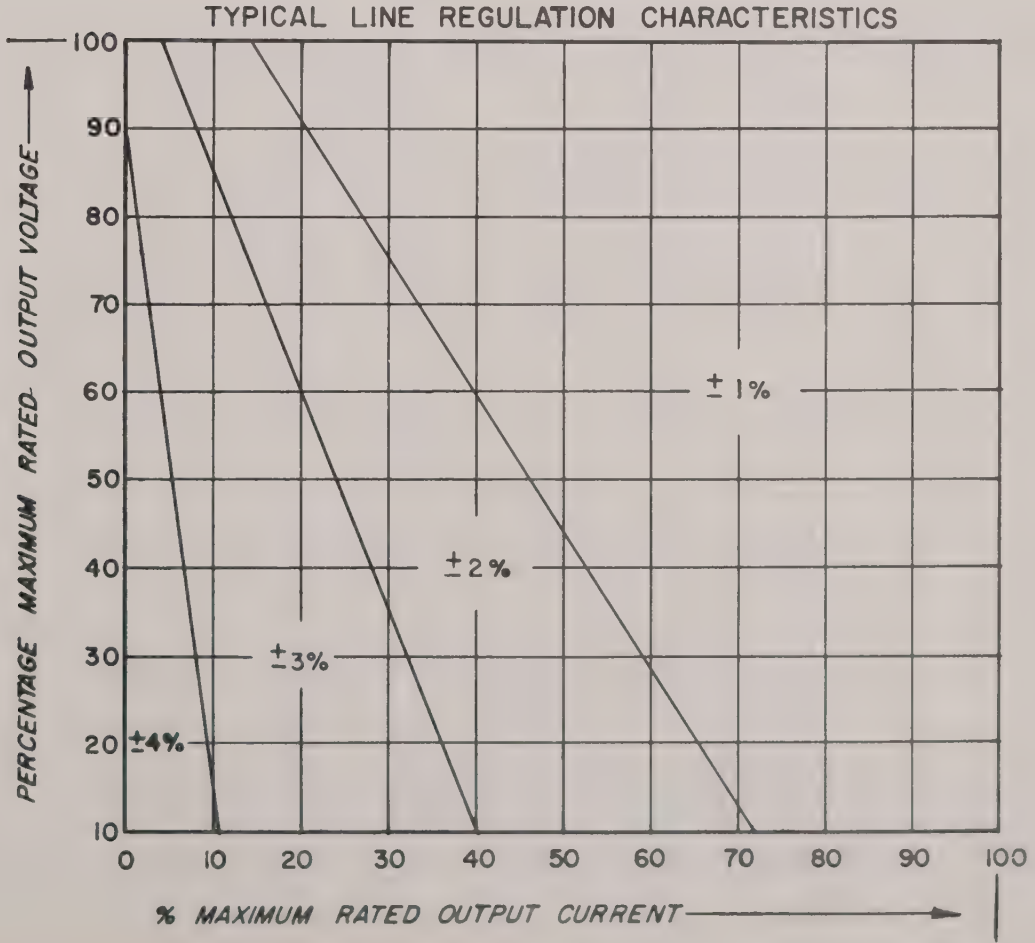
....FACTORY SERVICE

If it becomes necessary or desirable to return this equipment to KEPCO for repair, it should not be shipped to the factory without prior authorization and shipping instructions. The inclusion of detailed information with the unit, or in correspondence prior to its return, will greatly expedite the completion of repair work and return of the unit to the sender. In any correspondence to the factory about this Power Supply, the Model and Serial number should always be included.

TYPICAL RIPPLE CHARACTERISTICS



TYPICAL LINE REGULATION CHARACTERISTICS



kepco inc ® REPLACEMENT PARTS LIST

POWER SUPPLY MODEL PR 155-4M Code 6-865

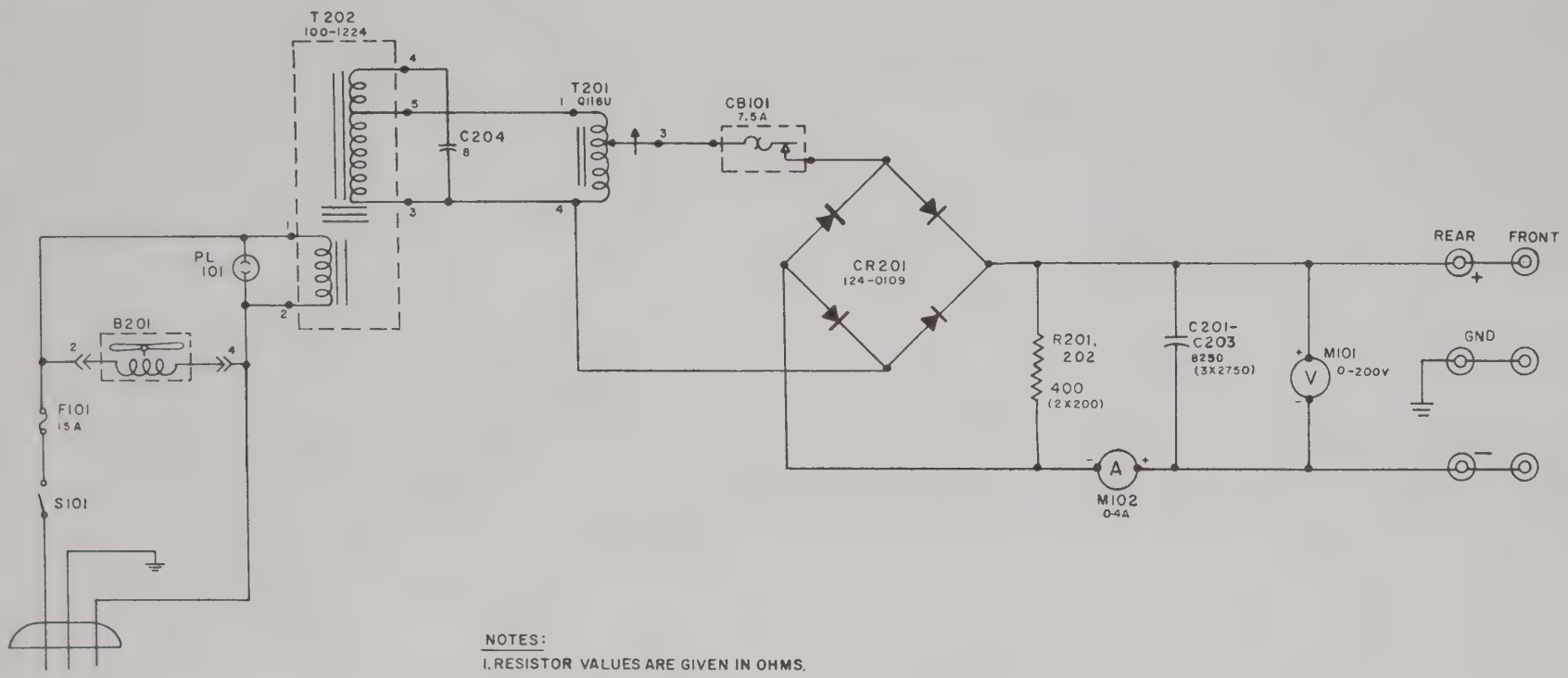
SCHEMATIC NO.	QTY.	DESCRIPTION	MFRS. NAME & PART NO. (See Note)	KEPCO PART NO.
B201	1	Fan	Rotron Muffin Fan	149-0013
C201-203	3	Capacitor, Electrolytic, Can 2,750 µf, 200 v	Sangamo DCM	117-0298
C204	1	Capacitor, Paper, Can Type 8 µf, 660 v ac	General Electric 49F6040	117-0393
CB101	1	Switch, Circuit Breaker 7 a, ac	Wood Electric CB2307	127-0131
CR201	1	Rectifier Assembly, Stack Type Includes the following:	Kepco Inc.	124-0269
	2ea.	Rectifier, Silicon, Stud	Tung Sol 1N3210	124-0165
	2ea.	Rectifier, Silicon, Stud	Tung Sol 1N3210R	124-0166
*M101	1	Meter, Volt 0-200 v, 2 1/2"	General Electric 8DW91V218AW2	135-0153
*M102	1	Meter, Amp 0-4 a, 2 1/2"	General Electric 8DW91A226BS2	135-0152
R201, 202	2	Resistor, Fixed, Power, Tubular 200 ohm, 50 w, 5%	Hardwick Hindle 2008	115-1053
S101	1	Switch, Toggle, SPST	Cutler Hammer 7501-K13	127-0012
T201	1	Transformer, Variable	Superior Electric Q116U	175-0331
T202	1	Transformer, Flux-O-Tran	Kepco Magnetics	100-1224

*Metered Models Only.

REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO. INC ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS, REPRESENTS AT LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.

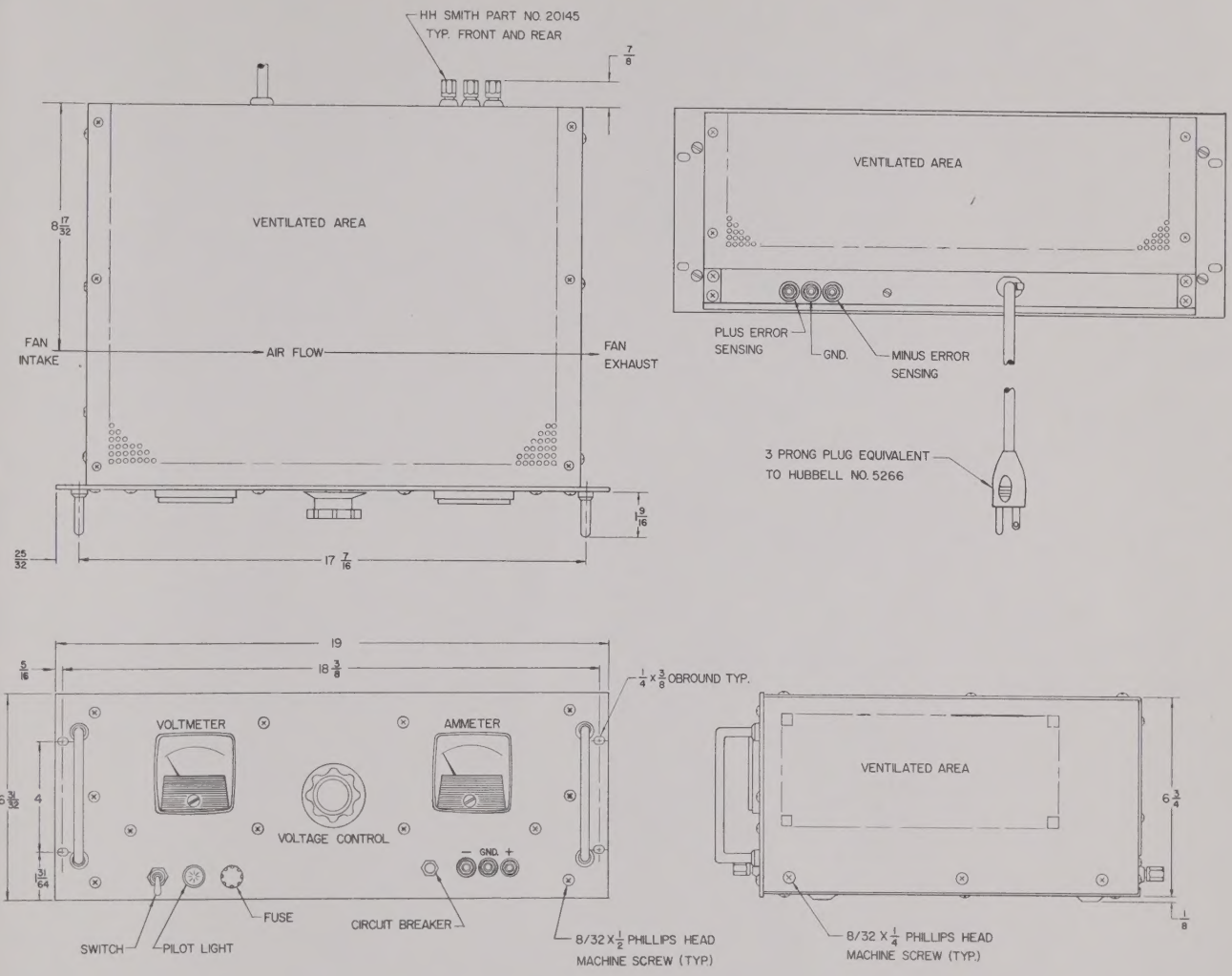
B M01161

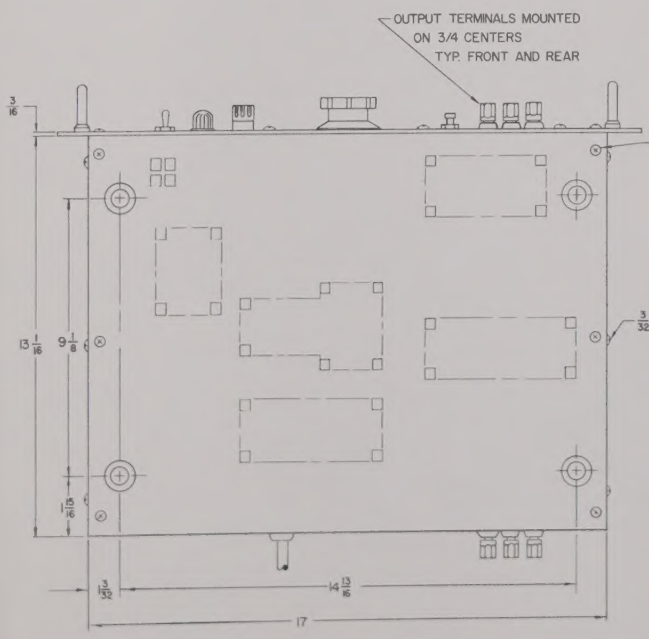


NOTES:

1. RESISTOR VALUES ARE GIVEN IN OHMS.
2. CAPACITOR VALUES ARE GIVEN IN MICROFARADS
3. M101 AND M102 USED IN MODEL PR 155-4M ONLY.
4. ORDER REPLACEMENT PARTS BY KEPCO PART NUMBER PROVIDED IN PARTS LIST SECTION.

KEPCO LABORATORIES	
FLUSHING NEW YORK	
ITEM: SCHEMATIC POWER UNIT	DES
	APPD L.Rosenfeld 4-18-61
MODEL PR 155-4M	DFTD R.A.
DWG No B M01161	CHKD JB





NOTES:

1-THIS DRAWING USED FOR MODELS: PR 15-30M, PR 38-15M, PR 80-8M, PR 155-4M, PR 310-2M, PR 220-3M.

2-MAT'L, COVERS NO. 18 COLD ROLLED STEEL, CADMIUM FINISH WITH A CHRONAK WASH, PANEL ALUM. ALLOY GRAY HAMMERTONE FINISH.

3-FUSE DATA:

MODEL	FUSE SIZE FIOI
PR 155-4M	15 AMP
PR 310-2M	15 AMP
PR 15-30M	15 AMP
PR 80-8M	15 AMP
PR 38-15M	15 AMP
PR 220-3M	15 AMP

4-REFER TO KEPCO CATALOG FOR DETAILED SPECIFICATIONS.

KEPCO INC.
FLUSHING, N.Y.
TITLE: OUTLINE DRAWING
DRAWN: LREY
CHECKED:
APPROVED:
DATE: 1-25-65
PANEL NO.: SEE NOTE 1
DWG. NO.: EMO 4723

131-38 SANFORD AVENUE • FLUSHING, N.Y. 11352 • Phone (212) IN 1-7000
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